

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

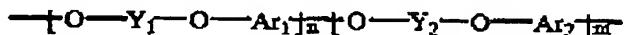
- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

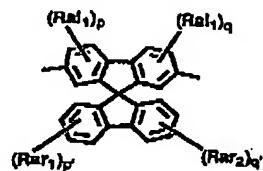
What is claimed is:

1. An insulating-film forming material comprising a resin (A) that has a structure represented by general formula (I):

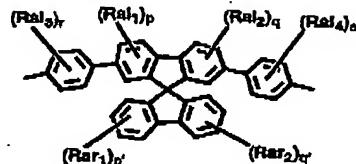


(I)

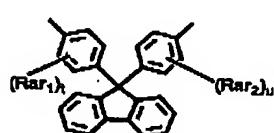
wherein Y_1 , Y_2 , Ar_1 and Ar_2 are the same or different; each of Y_1 , Y_2 , Ar_1 and Ar_2 represents an aromatic ring-containing divalent organic group; at least one of Y_1 and Y_2 is selected from the group consisting of formulae (Y-1), (Y-2), (Y-3) and (Y-4); m and n each indicates a molar percentage of the repeating units; and m falls between 0 and 100 with $(m + n) = 100$;



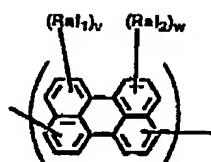
(Y-1)



(Y-2)



(Y-3)



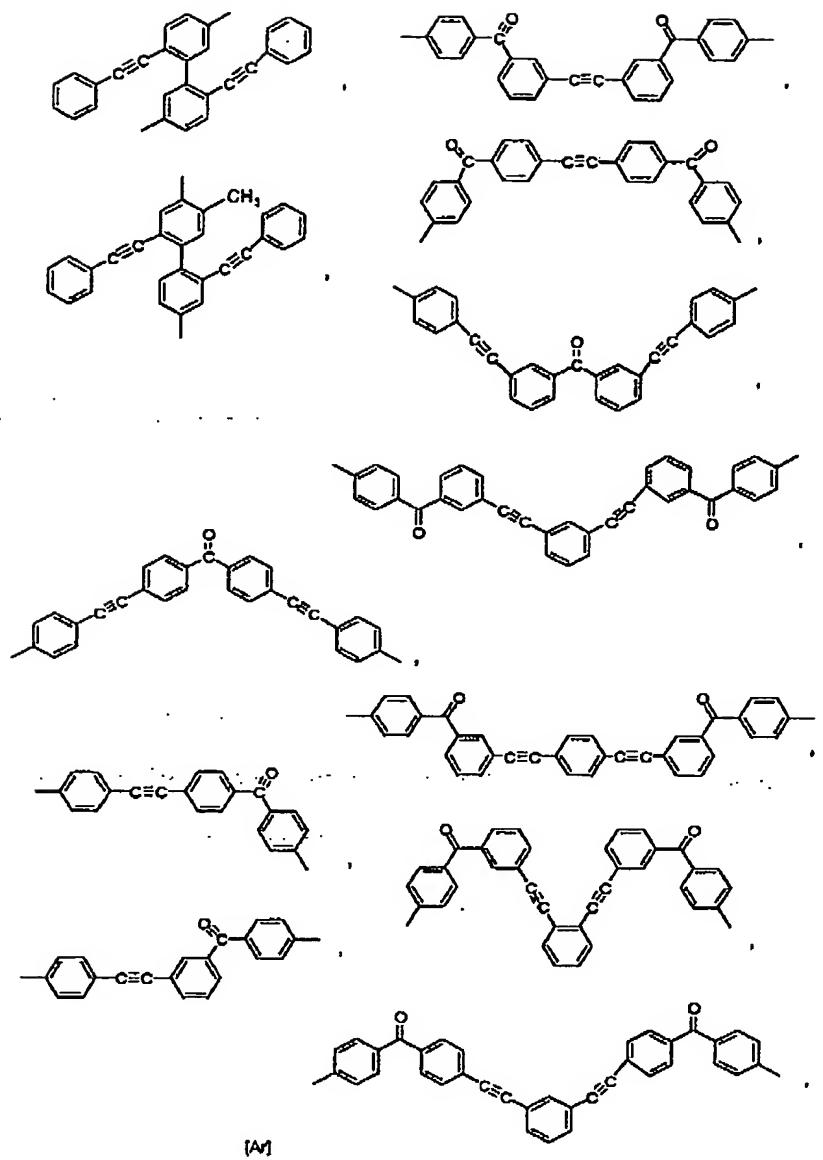
(Y-4)

in formulae (Y-1) and (Y-2), Ral_1 to Ral_4 each represents a monovalent hydrocarbon group not containing an aromatic ring;

Rar₁ and Rar₂ each represents an aromatic ring-containing monovalent hydrocarbon group; Ral₁ to Ral₄, Rar₁ and Rar₂ may bond to each other to form a ring; and p, q, r, s, p' and q' each indicates an integer of from 0 to 3; and in formulae (Y-3) and (Y-4), Ral₁ and Ral₂ each represents a monovalent hydrocarbon group not containing an aromatic ring; Rar₁ and Rar₂ each represents an aromatic ring-containing monovalent hydrocarbon group; Ral₁, Ral₂, Rar₁ and Rar₂ may bond to each other to form a ring; t and u each indicates an integer of from 1 to 4; and v and w each indicates an integer of from 0 to 4.

2. The insulating-film forming material as claimed in claim 1, wherein each of Y₁ and Y₂ in formula (I) is selected from the group consisting of formulae (Y-1) and (Y-2).

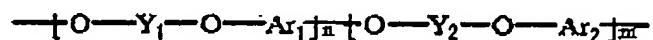
3. The insulating-film forming material as claimed in claim 1, wherein each of Y₁ and Y₂ in formula (I) is selected from the group consisting of (Y-3) and (Y-4), and each of Ar₁ and Ar₂ is selected from the group consisting of the following groups [Ar]:



4. An insulating film obtained by using an insulating-film forming material as claimed in claim 1.

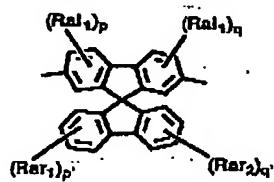
5. A porous insulating-film forming material

comprising: a polymer that has a structure represented by general formula (I); and at least one of a compound (B-1) and hollow particles (B-2), the compound (B-1) having a boiling or decomposition point of 250°C to 450°C,

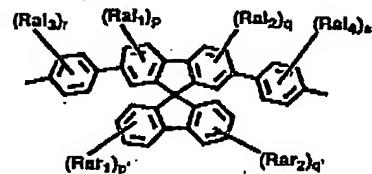


(I)

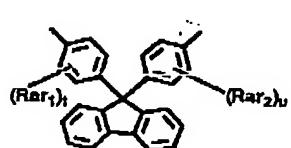
wherein Y_1 , Y_2 , Ar_1 and Ar_2 are the same or different; each of Y_1 , Y_2 , Ar_1 and Ar_2 represents an aromatic ring-containing divalent organic group; at least one of Y_1 and Y_2 is selected from the group consisting of formulae (Y-1), (Y-2), (Y-3) and (Y-4); m and n each indicates a molar percentage of the repeating units; and m falls between 0 and 100 with $(m + n) = 100$;



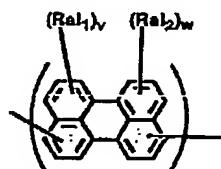
(Y-1)



(Y-2)



(Y-3)



(Y-4)

in formulae (Y-1) and (Y-2), Ral_1 to Ral_4 each represents a monovalent hydrocarbon group not containing an aromatic ring;

Rar₁ and Rar₂ each represents an aromatic ring-containing monovalent hydrocarbon group; Ral₁ to Ral₄, Rar₁ and Rar₂ may bond to each other to form a ring; and p, q, r, s, p' and q' each indicates an integer of from 0 to 3; and in formulae (Y-3) and (Y-4), Ral₁ and Ral₂ each represents a monovalent hydrocarbon group not containing an aromatic ring; Rar₁ and Rar₂ each represents an aromatic ring-containing monovalent hydrocarbon group; Ral₁, Ral₂, Rar₁ and Rar₂ may bond to each other to form a ring; t and u each indicates an integer of from 1 to 4; and v and w each indicates an integer of from 0 to 4.

6. The porous insulating-film forming material as claimed in claim 5, wherein each of Y₁ and Y₂ in formula (I) is selected from the group consisting of formulae (Y-1) and (Y-2).

7. The porous insulating-film forming material as claimed in claim 5, wherein each of Y₁ and Y₂ in formula (I) is selected from the group consisting of formulae (Y-3) and (Y-4).

8. A porous insulating-film forming material comprising a resin (A') that has a structure represented by formula (I'):



(I')

wherein Y_1 , Y_2 , Ar_1 and Ar_2 are the same or different; each represents an aromatic ring-containing divalent organic group;

at least one of Y_1 , Y_2 , Ar_1 and Ar_2 includes at least one of (a) a structure that decomposes under heat at 250°C to 450°C to generate gas; (b) a structure that decomposes through UV irradiation to generate gas; and (c) a structure that decomposes through electron beam irradiation to generate gas;

m and n each indicates a molar percentage of the repeating units; and

m falls between 0 and 100 with $(\text{m} + \text{n}) = 100$.

9. A porous insulating film obtained by using an insulating-film forming material as claimed in claim 5.

10. A porous insulating film obtained by using an insulating-film forming material as claimed in claim 8.